

Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1-11. (Cancelled)

12. (Currently Amended) A transceiver, comprising:

a plurality of ports including a plurality of programmable pads, wherein said plurality of ports a first programmable pad among said plurality of programmable pads includes is part of at least one a first parallel port and a second programmable pad among said plurality of programmable pads is part of at least one a first serial port, wherein at least one of said first programmable pad and said second programmable pad is configurable to operate according to a plurality of electrical specifications and a plurality of data protocols;

a bus ~~connecting~~ coupled to said plurality of ports on a common substrate, wherein said bus is configured to ~~connect~~ couple at least one of the at least one said first parallel port to at least one of a second parallel port ~~[[or]] and [[to]] said at least one first serial port and said first serial port to at least one of a second serial port and said first parallel port;~~

~~a plurality of programmable pads in communications with said plurality of ports, wherein at least one of said programmable pads is configured to operate with a plurality of electrical specifications such that an operating voltage of said at least one programmable pad can be changed according to a specified electrical specification; and~~

a pad control system ~~register for sending instructions~~ to configure said at least one of said first programmable pads ~~pad~~ and said second programmable pad to ~~comply~~ operate in accordance with a specified data protocol of said plurality of data protocols and ~~[[the]]~~ a specified electrical specification of said plurality of electrical specifications.
[[;]]

~~wherein at least one of said programmable pads is configured to either send or receive said data after having been configured to comply with said data protocol and electrical specification.~~

13. (Currently Amended) The transceiver of claim 12, ~~further comprising~~ wherein said pad control system comprises:

a timing controller ~~for modulating~~ configured to modulate a delay between an input and an output of said at least one of said first programmable pads ~~pad~~ and said second programmable pad.

14. (Currently Amended) The transceiver of claim ~~[[12]]~~ 13, ~~further comprising~~ wherein said pad control system comprises:

a timing register ~~for sending~~ configured to send instructions to adjust said delay between said input and said output of said at least one of said first programmable pads ~~pad~~ and said second programmable pad.

15. (Currently Amended) The transceiver of claim 12, ~~further comprising~~ wherein said pad control system comprises:

an input controller ~~for configuring~~ to configure said at least one of said first programmable ~~pads~~ pad and said second programmable pad to receive at least one of a data signal and a control signal.

16. (Currently Amended) The transceiver of claim 12, ~~further comprising~~ wherein said pad control system comprises:

an output controller ~~for configuring~~ to configure said at least one of said first programmable ~~pads~~ pad and said second programmable pad to send at least one of a data signal and a control signal.

17. (Currently Amended) The transceiver of claim 12, ~~further comprising~~ wherein said pad control system comprises:

a testing register ~~for sending~~ configured to send a test message to measure leakage current from said at least one of said first programmable ~~pads~~ pad and said second programmable pad.

18. (Currently Amended) A method for programming a transceiver, comprising:

(A) accessing instructions that specify a data protocol;

(B) accessing an electrical specification that includes instructions to change an operating voltage of a programmable pad disposed on the transceiver;

(C) sending a first control signal that carries said protocol and electrical specification instructions;

(D) executing said protocol and electrical specification instructions to configure said programmable pad;

(E) sending a second control signal to instruct said programmable ~~pad~~, pad ~~configurable~~ to function as an output or an input based on said protocol and electrical specification instructions, after executing said protocol and electrical specification instructions; and

(F) sending or receiving data at said programmable pad in accordance with said data protocol and said electrical specification.

19. (Currently Amended) The method according to claim 18, further comprising:

(G) sending an input control message to configure said programmable pad to receive at least one of data and a control message.

20. (Currently Amended) The method according to claim 18, further comprising:

(G) sending an output control message to configure said programmable pad to send at least one of data and a control message.

21. (Currently Amended) The method according to claim 18, further comprising:

(G) sending a test message to measure leakage current at said programmable pad.

22. (Currently Amended) The method according to claim 18, further comprising:

(G) sending a delay control message to adjust said delay between input and output at said programmable pad.

23. (Currently Amended) The method according to claim 22, further comprising:

(H) delaying data at said programmable pad for a fixed time interval;

(I) sending said data to a destination external to said programmable pad upon expiration of said fixed time interval, wherein said delay control message determines said fixed time interval.

24. (Currently Amended) The method according to claim 22, further comprising:

(H) delaying data in a buffer at said programmable pad for a fixed time interval;

(I) sending said data to a second buffer or a destination external to said programmable pad upon expiration of said fixed time interval, wherein said delay control message determines whether said data is sent to said second buffer or said destination.

25. (Currently Amended) A transceiver, comprising:

a plurality of ports including a plurality of programmable pads, wherein a first programmable pad in said plurality of programmable pads is part of a first parallel port and a second programmable pad in said plurality of programmable pads is part of a first

serial port, wherein at least one of said first programmable pad and said second programmable pad is configurable to operate with a plurality of electrical specifications and a plurality of data protocols;

a means for coupling at least one of said first parallel port to at least one of a second parallel port and said first serial port and said first serial port to at least one of a second serial port and said first parallel port;

protocol means for accessing ~~protocol~~ instructions that specify at least one of a specified data protocol from a plurality of data protocols and a specified [[an]] electrical specification from a plurality of electrical specifications ~~that includes instructions to change an operating voltage of a programmable pad disposed on the transceiver; and~~

control logic for executing said ~~protocol~~ instructions to configure at least one of said first programmable pad and said second programmable pad, ~~such that said programmable pad is configured to function as an output or an input based on said protocol and electrical specification instructions and to either send or receive data after having been configured to comply with said data protocol and said electrical specification~~ to comply with said specified data protocol and said specified electrical specification.

26. (Currently Amended) The transceiver of claim 25, further comprising:
input control means for instructing said at least one of said first programmable pad and said second programmable pad to receive at least one of data and a control message.

27. (Currently Amended) The transceiver of claim 25, further comprising:
output control means for instructing said at least one of said first programmable pad and said second programmable pad to send at least one of data and a control message.

28. (Currently Amended) The transceiver of claim 25, further comprising:
testing means for measuring leakage current at said at least one of said first programmable pad and said second programmable pad.

29. (Currently Amended) The transceiver of claim 25, further comprising:
timing means for adjusting the delay between input and output at said at least one of said first programmable pad and said second programmable pad.

30. (Currently Amended) The transceiver of claim 29, further comprising:
means for delaying data at said at least one of said first programmable pad and said second programmable pad for a fixed time interval; and

means for sending said data to a destination external to said at least one of said first programmable pad and said second programmable pad upon expiration of said fixed time interval, wherein said timing means determines said fixed time interval.

31. (Currently Amended) The transceiver of claim [[1]] 12, wherein at least one of said at least one first parallel port and said second parallel port is configured to operation according to a 10 Gigabit Media Independent Interface (XGMII) protocol.

32. (Currently Amended) The transceiver of claim [[1]] 12, wherein said ~~at least one~~ first parallel port is configured to operate at 1/10 of a data rate of said ~~at least one~~ first serial port.

33. (Currently Amended) The transceiver of claim [[1]] 12, wherein said ~~at least one~~ first serial port is configured to operate according to a 10 Gigabit Attachment Unit Interface (XAUI) protocol.

34. (Currently Amended) The transceiver of claim [[1]] 12, wherein said ~~at least one~~ first serial port is configured to operate at a plurality of data rates.

35. (Currently Amended) The transceiver of claim 34, wherein said plurality of data rates includes at least one of: 3.125 GHz, 2.5 GHz, [[or]] and 1.25 GHz.

36. (Currently Amended) The transceiver of claim ~~[[1]]~~ 12, wherein said ~~at least one~~ first serial port is configured to operate according to a 10 Gigabit Ethernet Extended Sublayer (XGXS) protocol.

37. (Currently Amended) The transceiver of claim ~~[[1]]~~ 12, wherein said ~~at least one~~ first serial port is configured to perform a parallel to serial conversion when said first serial port ~~said data is received~~ receives ~~[[as]]~~ parallel data.

38. (Currently Amended) The transceiver of claim ~~[[1]]~~ 12, wherein said ~~at least one~~ first parallel port is configured to perform a serial to parallel conversion when said first parallel port ~~on said data when received~~ receives ~~[[as]]~~ serial data.

39. (New) The transceiver of claim 12, wherein said pad control system comprises:

a register for sending instructions to configure said at least one of said first programmable pad and said second programmable pad to comply with said specified data protocol and said specified electrical specification.

40. (New) The transceiver of claim 12, wherein an operating voltage of said at least one of said first programmable pad and said second programmable pad is changed according to said specified electrical specification.

41. (New) The transceiver of claim 12, wherein said at least one of said first programmable pad and said second programmable pad is configured to either send or receive data after having been configured to comply with said specified data protocol and said specified electrical specification.

42. (New) The transceiver of claim 25, wherein said instructions includes instructions to change an operating voltage of a programmable pad disposed on the transceiver.

43. (New) The transceiver of claim 25, wherein said at least one of said first programmable pad and said second programmable pad is configured to function as an output or an input based on said instructions.

44. (New) The transceiver of claim 25, wherein said at least one of said first programmable pad and said second programmable pad is configured to either send or receive data after having been configured to comply with said specified data protocol and said specified electrical specification.